A HUMAN-CENTERED COMPUTING VIEW OF PLANETARY EXPLORATION

Robert J. Hansen & Kenneth M. Ford
Institute for Human and Machine Cognition
University of West Florida

Outline

- Project
- Perspective
- Participants
- Process
- Product

Project

- Human-Centered Computing view of the future (20 years +) of surface exploration of Mars and other planets
  - Human capability: no change
  - Science objectives: evolutionary changes
  - Technology: revolutionary changes

PERSPECTIVE

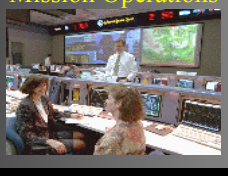
All exploration is human exploration.
We are not in a race with our machines.

Kenneth M. Ford
AAAI, 1999

Human-Centered Computing

Human-Centered Computing focuses on melding computer and human capabilities together into a system that synergistically exploits the capabilities and performance of each toward a specified goal or objective.

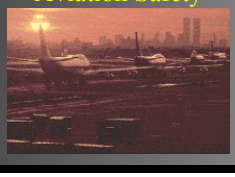
Mission Operations



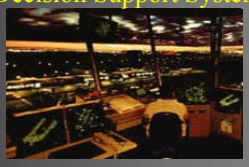
HCC is characterized by:

- a "systems perspective"
- a deep understanding of cognitive, computational, and social elements of the task
- exploiting an understanding of human biology or psychology
- *in situ* performance evaluation

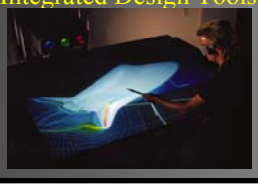
Aviation Safety



Decision Support Systems



Integrated Design Tools



Cognitive Prostheses

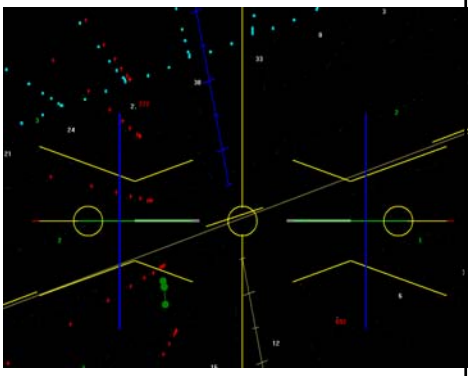
Human Centered Computing can be understood as an effort to build *cognitive prostheses*, that is, computational systems that leverage and extend human intellectual and perceptual capacities.

~(Passing the Turing Test)

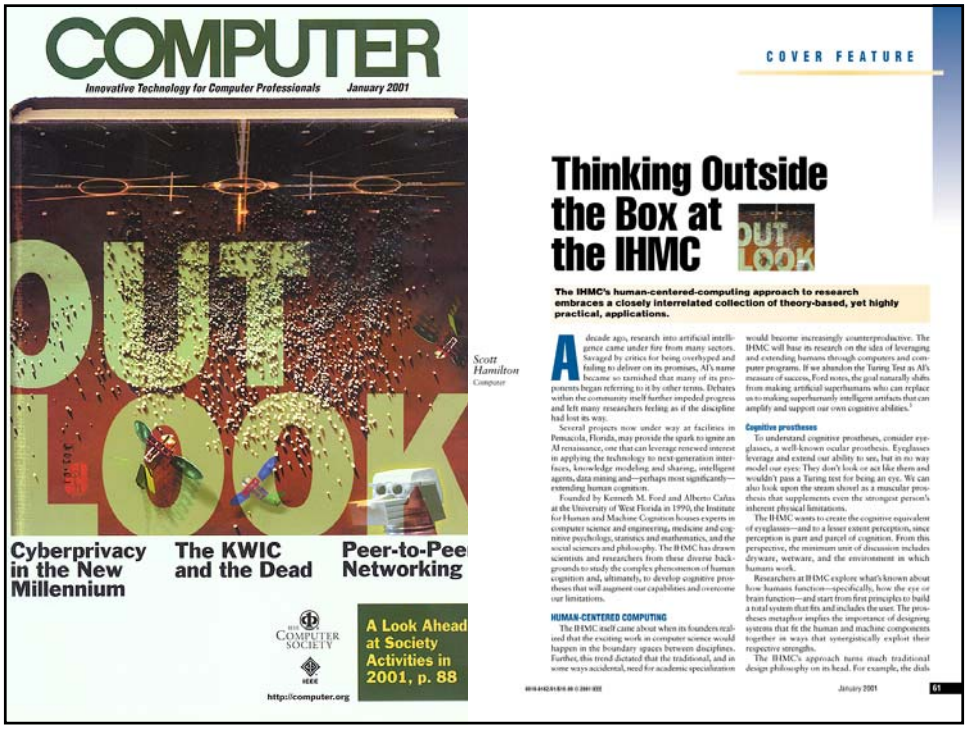
The aim is to build computational systems that amplify human intelligence rather than substitute for it…

…not *artificially* intelligent computers that would pass the Turing Test, but *actually* intelligent systems that wouldn't.

OZ: A HUMAN CENTERED COCKPIT DISPLAY




Concept MAP
Tools
Countries that are using the CMapTools


COMPUTER
Innovative Technology for Computer Professionals
January 2001
OUT LOOK
Cyberprivacy in the New Millennium
The KWIC and the Dead
Peer-to-Pee Networking
A Look Ahead at Society Activities in 2001, p. 88
http://computer.org
COVER FEATURE
Thinking Outside the Box at the IHMC
The IHMC's human-centered-computing approach to research embraces a closely interrelated collection of theory-based, yet highly practical, applications.
Scott Hamilton
Computer
HUMAN-CENTERED COMPUTING
Cognitive prostheses
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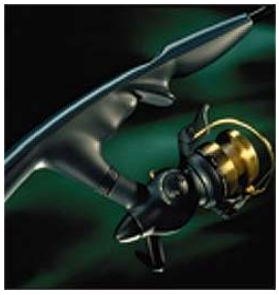
PARTICIPANTS

- Institute for Human and Machine Cognition
- IDEO
- John Frassanito & Associates
- Academic and NASA experts
  - Mars science
  - Computer science

IDEO



JOHN FRASSANITO & ASSOC

PROCESS

- Sequence of team meetings
- Draw up-on unique strengths of partners
  - Integration of medical, social, and computer science at IHMC
  - Innovative product design expertise of IDEO
  - Strategic visualization capabilities of JF&A
  - Mars science expertise of NASA and academic partners

PRODUCT

- Report-of course
- Visualization of the future
- Other as helpful and permitted by schedule and budget